Abstract Submitted
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Pulsed Laser Gate Experiment for Magnetized Liner Inertial Fusion (MagLIF)[1] S.M. MILLER, Univ of Michigan, S.A. SLUTZ, M.R. GOMEZ, Sandia National Labs, S.R. KLEIN, P.C. CAMPBELL, J.M. WOOLSTRUM, D.A. YAGER-ELORRIAGA, N.M. JORDAN, Y.Y. LAU, R.M. GILGENBACH, R.D. MCBRIDE, Univ of Michigan — Fuel preheating in full scale magnetized liner inertial fusion (MagLIF) currently has low efficiency. This loss is thought to occur from laser-plasma interactions (LPI) at the laser entrance window (LEW). The gaseous fuel is held in a pressurized vessel by the thin mylar LEW that must be removed right before heating. To ensure more laser energy heats the fuel, the LEW could be weakened at an early time [1]. One proposed solution [1] is to use the current from a small pulse generator to break the LEW allowing it to open outward from the fuel. With the LEW removed away from the laser path, LPI losses would be reduced. Wire attached to a 13 kV mini-pulser will be used to remove the LEW from the laser path. We will report on LEW fabrication and the current state of the laser gate project. [1] S. A. Slutz, C. A. Jennings, T. J. Awe, G. A. Shipley, B. T. Hutsel, and D. C. Lamppa, "Auto-magnetizing liners for magnetized inertial fusion", Phys. Plasmas **24**, 012704 (2017); S. A. Slutz, personal communication (2017).

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